UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604

DATE: JAN 15 2020

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
AmeriTi Manufacturing, Detroit, Michigan

FROM: Natalia Vazquez, Environmental Engineer
AECAB (MI/WI)

THRU: Sarah Marshall, Section Chief
AECAB (MI/WI)

TO: File

BASIC INFORMATION

Facility Name: AmeriTi Manufacturing (a.k.a. Global Titanium)

Facility Location: 19300 Filer Avenue Detroit, Michigan

Date of Inspection: December 5, 2019

EPA Inspector(s):
1. Natalia Vazquez, Environmental Engineer
2. Constantinos Loukeris, Environmental Engineer

Other Attendees
1. Todd Zynda, Senior Environmental Engineer Michigan Department of Environment, Great Lakes, and Energy
2. Robert Swenson, President, AmeriTi Manufacturing
3. Adam Perry, Vice-President, AmeriTi Manufacturing
4. Ron Vickers, Assistant Operations Manager, AmeriTi Manufacturing

Contact Email Address: rvickers@ameriti.com

Purpose of Inspection: Determine compliance with facility's minor source permit and federal regulations

Facility Type: manufacturer of titanium metallurgical products

Regulations Central to Inspection: 40 C.F.R. Part 63 Subparts YYYYYY and ZZZZZZ, National Emission Standard for Hazardous Air Pollutants for Area Sources: Ferroalloys Production Facilities and Area Source Standards for Aluminum, Copper, and Other Nonferrous Foundries

Arrival Time: 8:40 a.m.
Departure Time: 12:02 p.m.

Inspection Type:
☒ Unannounced Inspection
☐ Announced Inspection

OPENING CONFERENCE

☒ Credentials Presented
☒ CBI warning to facility provided

The following information was obtained verbally from AmeriTi unless otherwise noted.

Process Description:
The facility started operations in 1950s, the latest addition was in 2015, metal injection molding.

Wash buildings (2): both buildings process about 3.5 million pounds of titanium per month. These are 24 hours - 7 days a week operation, except for one day that is dedicated to preventative maintenance and cleanup (8 to 12-hour shift). The titanium powder is crushed and cleaned. Each building is controlled by its own water scrubber. The larger sized titanium is reused in the melt shop, the finer size titanium is used at the process in warehouse no.5 and the medium sized titanium is considered a finished product. The cleaner used in the washer is 15% potassium and water based. These operations are controlled by a water scrubber. The batch process takes an average of 8 to 9 hours.

Hydride-dehydride process: the titanium powder is heat treated in a vacuum furnace and exposed to hydrogen. This results in a crushable material, which is crushed and sized. The crushed material then goes through a vacuum furnace at lower temperature to remove the hydrogen. The sized material may be blended. The hydride process takes 7 days and the dehydride another 7 days; each process is run in batches.

Ferro titanium process: titanium scraps and ferroalloy are blended and casted in an induction furnace (also known as melt shop). The induction furnace melts without refining. A baghouse controls the two induction furnaces. The heat-treated metals then get crushed by 4 crushers. The crushers are in the process of being relocated as part of the changes being made as consequence of an explosion that took place as result of outdated processes and processes followed improperly.

Metal injection molding process: titanium powder, waxes and polymers (90% metal 10% binder) are combined and turned into a mix with paste constancy when exposed to heat. The mix is injected into a part and cooled. The binder is removed in the furnace (24 hours). The solvent used in this type of process is considered proprietary by AmeriTi's supplier and has been claim as Confidential Business Information (CBI).

Investment casting process: a wax mold gets dipped 7 times into a mix of ceramics and sand. The molds are autoclave, in a rapid steam pressurized chamber. A burnout kiln is used to dry and solidify the shells. These shells are moved into a vacuum furnace and then the shell is knockout. The parts are cut, blasted and finished. This process takes between 10 to 14 days and is controlled by several dust collectors.

Torch building: the facility cuts titanium dioxide in a down draft table with fume hood that is controlled by a baghouse. AmeriTi uses an acetylene torch. This process is done only during the day shift.

The facility has a water pretreatment area capable of removing metals (such as nickel and chrome) and adjust pH. The water is then sent to the public waste water treatment plant.

TOUR INFORMATION

EPA toured the facility: Yes

Data Collected and Observations:
EPA inspectors observed fugitive emissions (haze) in the room where the induction furnaces are located. Four photographs were taken in the of the room, known as melt shop, with visible fugitive emissions.

EPA inspectors observed a pressure drop of 3.2, at the induction furnace baghouse.

During the walkthrough, EPA inspectors observed the drop pressure meter of the scrubber that controls the crushers (titanium and ferroalloy process), oscillating between 6 and 10 psig. EPA inspectors were not able to observe the stack connected to the scrubber.

The torch building's baghouse had a pressure drop between 4.6 and 4.8.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

CLOSING CONFERENCE

Requested documents:

- NESHAP determination made by the facility's contractor (Impact) for subparts YYYYYY and ZZZZZZ.
- Design information on the furnace located in the injection molding building
- Design information for all thee baghouses controlling the injection cast building
- Most recent annual test results of the baghouse dust being sent to the landfill
- 2018 Metal Testing
- Records that were requested by Michigan EGLE during the inspection

EPA is expecting these records on January except for the NESHAP determinations.

Concerns: EPA inspectors identified the following as areas of concern during the closing conference: scrubber monitoring; capture efficiency of the hood and baghouse controlling the melt shop; and the facility's applicability to the area source regulations.

SIGNATURES

Report Author: Natalia L Vazquez Date: 1/15/2020

Section Chief: [signature] Date: 1/15/2020

Facility Name: AmeriTi Manufacturing (a.k.a. Global Titanium)
Facility Location: Detroit, Michigan
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APPENDICES AND ATTACHMENTS

1. Video log
2. Confidential Business Information
3. CD-R with photographs

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Facility Location: Detroit, Michigan
Date of Inspection: December 5, 2019

APPENDIX A: DIGITAL IMAGE LOG

1. **Inspector Name:** Constantinos Loukeris	2. **Archival Record Location:** *CD-R labeled as AmeriTi, Detroit, Michigan, 12/5/2019*

Image Number	File Name	Date and Time (incl. Time zone and DST)	Description of Image
1	AmeriTi (1).jpg	12/5/2019 10:47 a.m. EST	Fugitive emissions in the melt shop related to the induction furnace
2	AmeriTi (2).jpg	12/5/2019 10:47 a.m. EST	Fugitive emissions in the melt shop related to the induction furnace
3	AmeriTi (3).jpg	12/5/2019 10:47 a.m. EST	Fugitive emissions in the melt shop related to the induction furnace
4	AmeriTi (4).jpg	12/5/2019 10:47 a.m. EST	Fugitive emissions in the melt shop related to the induction furnace